



TIL 2025 Conference Program

09:00 - 10:00 Participant Registration

10:00 – 10:30 Conference Opening

10:30 - 11:30 PLENARY SESSION (Main Hall)

PARTICIPATORY TECHNOLOGY GAP ASSESSMENT FOR SMART MOBILITY: EVIDENCE FROM SIX PILOT TERRITORIES

Marijana PETROVIĆ, Stanko BAJČETIĆ, University of Belgrade-Faculty of Transport and Traffic Engineering, Belgrade, Serbia, Innovation Center of the Faculty of Mechanical Engineering, Belgrade, Serbia, Monaco BARBARA, Zampese SILVIA, Area Science Park, Trieste, Italy, Nikolopoulou KATERINA, Liakou HARA, CIVINET Greece-Cyprus, Athens, Greece.

APPLICATION OF COMPUTATIONAL AND EXPERIMENTAL METHODS IN THE ANALYSIS AND DESIGN OF MODERN VERTICAL-ROPE TRANSPORT SYSTEMS

Radomir ĐOKIĆ, Jovan VLADIĆ, Tanasije JOJIĆ, University of Novi Sad, Faculty of Technical Sciences, Department for Mechanization and Engineering Design

11:30–12:10 Panel Discussion: "Cooperation Between Science and Industry – Challenges for Companies in the Context of Transport and Logistics in Global Conditions"

Panel participants: Philip Morris International, Naftna industija Srbije, ZF, Aerodrom Konstantin Veliki Niš, Zumtobel Lighting, Milšped.

12:10 - 12:25 Pause (15 minutes, Coffee Break)

12:25 - 15:00 Paper Presentations:

The academic community will present scientific papers, followed by company representatives showcasing their research and practical solutions, with a focus on university–industry collaboration, practical ideas, challenges, and solutions. (Leoni, Naftna Industrija Srbije, Constantine the Great Airport Niš, and Tigar Tyres)

- Room 1 (Main Hall): Logistics
- OPTIMIZATION OF FLEXIBLE JOB SHOP SCHEDULING WITH MACHINE TOOL BREAKD Katarina BRENJO, Aleksandar JOKIĆ, Milica PETROVIĆ, University of Belgrade – Faculty of Mechanical, Engineering, Department of Production Engineering.
- EVALUATION OF COLD SUPPLY CHAIN CHALLENGES USING THE q-RUNG ORTHOPAIR
 FUZZY SUBJECTIVE WEIGHTING APPROACH: THE CASE OF ORDU PROVINCE
 Ahmet AYTEKIN, Samsun University, Department of International Trade and Business, Faculty of Political
 Sciences, Selçuk KORUCUK, Giresun University, Department of Logistics Management.

- EVALUATION OF PRIORITY ENVIRONMENTAL ISSUES IN PORT OPERATIONS USING THE q-ROF-SWARA METHOD: THE CASE OF SAMSUN
 - **Selçuk KORUCUK**, Giresun University, Department of Logistics Management, **Ahmet AYTEKİN**, Samsun University, Depart Department of International Trade and Business, Faculty of Political Sciences
- ANFIS-BASED PREDICTION OF ENERGY GENERATION INFLUENCE ON ELECTRICAL DEMAND AND PRICE IN SMART ENERGY LOGISTICS
 - **Miloš MILOVANČEVIĆ**, Faculty of Mechanical Engineering, Niš, **Ljubomir VRAČAR**, Faculty of Electronic Engineering, Niš.
- GREEN LOGISTICS AND THE CIRCULAR ECONOMY: DYNAMIC IMPACTS ON LOGISTICS SYSTEM PERFORMANCE AND ENVIRONMENTAL FOOTPRINT
 - Aleksandra ANDJELKOVIĆ, Faculty of Economics, University of Niš, Serbia
- OPTIMIZATION OF DRIVE-IN RACKING STORAGE SOLUTION
 Rodoljub VUJANAC, Nenad MILORADOVIC, Mirjana PISKULIC, Mechanical Construction and Mechanization,
 Faculty of Engineering University of Kragujevac
- AUTOMATIC DETERMINATION OF THE ARRANGEMENT OF GOODS ON A PALLET Vladislav BLAGOJEVIĆ, Saša RANĐELOVIĆ, Srđan MLADENOVIĆ, Faculty of Mechanical Engineering, University of Niš
- DISCRETE EVENT SIMULATION MODEL FOR EXPECTED CYCLE TIME OF AS/RS WITH DOUBLE DEEP PALLET RACK
 Marko TODOROVIĆ, Predrag MLADENOVIĆ, Goran MARKOVIĆ, Mile SAVKOVIĆ, Nebojša B. ZDRAVKOVIĆ,
- HYBRID SWARA-MULTIMOORA FRAMEWORK FOR CUTTING TOOL MATERIAL SELECTION IN TURNING OF STEEL COMPONENTS
 Aleksandar TRAJKOVIĆ, Aleksandar STANKOVIĆ, Miloš MADIĆ, Goran PETROVIĆ, University of Niš, Faculty of Mechanical Engineering, Niš, Serbia

Goran PAVLOVIĆ Faculty of mechanical and civil engineering in Kralievo, University of Kraguievac, Kralievo (Serbia)

- PRODUCTION SCHEDULING OPTIMIZATION FOR THE MANUFACTURING OF POWER PLUG ADAPTERS USING A FLEXIBLE JOB SHOP APPROACH
 Rajko TURUDIJA, Aleksandar STANKOVIĆ, Miloš STOJKOVIĆ, Goran PETROVIĆ, Predrag MILIĆ, Faculty of Mechanical Engineering, University of Niš, Serbia
- INTEGRATING SMART INFORMATION SYSTEMS AND THE INDUSTRIAL METAVERSE IN MEDICAL DEVICE PRODUCTION AND LOGISTICS
 Nikola VITKOVIĆ, Associate Professor, Faculty of Mechanical Engineering, University of Niš, Serbia, Milan MITKOVIĆ, Faculty of Medicine, University of Niš, Serbia, Marek CHODNICKI, Gdańsk University of Technology, Poland, Milica BARAĆ, Faculty of Mechanical Engineering, University of Niš, Serbia
- AERODROM KONSTANTIN VELIKI KAO LOGISTIČKI CENTAR PERSPEKTIVA RASTA I BUDUĆI INFRASTRUKTURNI PROJEKAT Dušan KNEŽEVIĆ, Aerodrom Konstantin Veliki Niš Direktor Sektora Aerodrom Konstantin Veliki Niš, Marijana STAMENKOVIĆ, Aerodrom Konstantin Veliki Niš Rukovodilac zemaljskog opsluživanja Sanja MILOŠEVIĆ, Aerodrom Konstantin Veliki Niš Saradnik za bezbednost vazdušnog saobraćaja
- LOGISTICS NETWORK GLOBAL SERVICE
 Miloš ANĐELKOVIĆ, LEONI Wiring Systems Southeast d.o.o Head of Logistic Management, LEONI Serbia,
 Bojana STAMENKOVIĆ, LEONI Wiring Systems Southeast d.o.o Lead Specialist Communications, Serbia

12:25 - 15:00 Paper Presentations:

- Room 2 (Motorola Hall): Vehicles
- THERMAL CONDITIONS IN THE PASSENGER COMPARTMENT OF MICROCARS
 Dragan RUŽIĆ, University of Novi Sad, Faculty of Technical Sciences, Department for Mechanization and Engineering Design, Chair for Motor Vehicles and IC Engines
- MODELING THE DRIVING RANGE OF ELECTRIC VEHICLES: A TECHNICAL CONTRIBUTION
 Goran Radoičić Faculty of Economics and Engineering Management in Novi Sad University Business Academy in
 Novi Sad, Siniša ŠKRBIĆ, The Academy of Applied Studies Polytechnic Belgrade, Miroslav VULIĆ, Faculty of
 Economics and Engineering Management in Novi Sad University Business Academy in Novi Sad.

NOVEL I.C. ENGINE DESIGN

Jovan DORIĆ, Faculty of Technical Sciences, University of Novi Sad, Serbia, Boban NIKOLIĆ, Faculty of Mechanical Engineering, University of Niš, Serbia, Ivan GRUJIĆ, Faculty of engineering, University of Kragujevac, Serbia, Nadica STOJANOVIĆ. Faculty of engineering, University of Kragujevac, Serbia

- COMPUTATIONAL ANALYSIS OF THE VEHICLES COLLISION

Nadica STOJANOVIĆ, Ivan GRUJIĆ, University of Kragujevac, Faculty of Engineering, Željko ĐURIĆ, Faculty of mechanical engineering, University of Banja Luka, Bojana BOŠKOVIĆ, Academy of professional studies Šumadija, Department in Trstenik. Trstenik. Serbia.

BRAKING ENERGY RECUPERATION IN PASSENGER VEHICLES USING A COMPRESSED AIR STORAGE SYSTEM

Vojislav STEFANOVIĆ, **Miloš MILOŠEVIĆ**, **Aleksandra CVETKOVIĆ**, Department of Mechatronics and Control, Faculty of Mechanical engineering, University of Niš

OPTIMIZATION OF FULL-CAR MODEL PASSIVE SUSPENSION DYNAMICS USING GENETIC ALGORITHMS

Marko MILOJKOVIĆ, Department of Control Systems, Faculty of Electronic Engineering, University of Niš, Serbia, Jianxun CUI, Harbin Institute of Technology, School of Transportation Science and Engineering, Harbin, China, Dragan ANTIĆ, Saša S. NIKOLIĆ, Staniša PERIĆ, Department of Control Systems, Faculty of Electronic Engineering, University of Niš, Serbia.

- CONTEMPORARY CHALLENGES AND TECHNOLOGICAL PROGRESS IN THE DEVELOPMENT OF ELECTRIC AND HYBRID ELECTRIC VEHICLES
 - Ivan SAVIĆ, Miloš MILOŠEVIĆ, Predrag MILIĆ, Faculty of Mechanical Engineering, University of Niš
- UTICAJ PNEUMATIKA NA POTROŠNJU GORIVA KOD KOMERCIJALNIH VOZILA Dr Milan SAVIĆEVIĆ, Dragan RADOVANOVIĆ, Naftna Industrija Srbije d.o.o.
- TRANSPORT U PREDUZEĆU TIGAR TYRES D.O.O. MICHELIN SRBIJA Slađana SOKOLOVIĆ, Tigar Tyres d.o.o. Michelin Srbija

15:00 - Gala Lunch at Aleksić Restaurant

(Address: Bulevar Nikole Tesle BB, Niš 18000)

17:00 - 17:30 - Poster Session

 APPLYING THE GOAL PROGRAMMING MODEL TO STRATEGIC PLANNING FOR SUSTAINABLE BUSINESS PRACTICES

Zoran POPOVIĆ University of Belgrade, Faculty of Economics and Business, **Đorđe KOTARAC**, University of Belgrade, Department of Economics, Faculty of Agriculture.

INFLUENCE OF SELECTED BIODIESEL PROPERTIES ON FUEL CONSUMPTION

Boban NIKOLIĆ, Faculty of Mechanical Engineering, University of Niš, Serbia, **BREDA KEGL**, Faculty of Mechanical Engineering, University of Maribor, Slovenia, **Jovan DORIĆ**, Faculty of Technical Sciences, University of Novi Sad, Serbia, **Dragan MARINKOVIĆ**, Department of Structural Analysis, Berlin Institute of Technology, Berlin, Germany, Institute of Mechanical Science, Vilnius Gediminas Technical University, Lithuania, **Nikola PETROVIĆ**, Faculty of Mechanical Engineering, University of Niš, Serbia.

 THE ROLE OF DRONES AND ROBOTIC DOGS IN TACTICAL SUPPLY CHAINS USING A MODEL FOR LOGISTICAL SUPPORT PLANNING

Nikola SIMIĆ, University of Kragujevac, Faculty of Engineering, **Aleksandar STANKOVIĆ**, University of Niš, Faculty of Mechanical Engineering

 STABILITY OF FLOATING CRANES FOR LIFTING SUNKEN OBJECTS AND STEEL PILES Rade VASILJEVIĆ, School of Railroad Transport, Academy of Technical and Art Applied Studies.

FORMING OF ZIPLINE MATHEMATICAL MODEL

Tanasije JOJIĆ, Jovan VLADIĆ, Radomir ĐOKIĆ, Department of Mechanization and Design Engineering, Faculty of Technical Sciences, University of Novi Sad.

APPLICATION OF ENGINEERING ANALYSIS AND MODERN DESIGN TECHNIQUES IN FORMULA STUDENT RACE CAR CHASSIS DEVELOPMENT

Dragan ŽIVANIĆ, **Nikola ILANKOVIĆ**, **Jovan DORIĆ**, **Mirko KATONA**, University of Novi Sad, Faculty of Technical Sciences, Department of Mechanization and Design Engineering

INTEGRATED MCDM MODEL FOR FORKLIFT SELECTION IN WAREHOUSE

Jelena Mihajlović, Saša Marković, Goran Petrović, Predrag Milić, Faculty of Mechanical Engineering, University of Niš (Serbia), **Milica Ivanović,** The Academy of Applied Studies Polytechnic – Department in Požarevac,

17:30 - 19:30 Paper Presentations:

- Room 1 (Main Hall): Transport Engineering
- DESIGN OF HORIZONTAL AND SLIGHTLY INCLINED SCREW CONVEYORS A CASE STUDY Saša MARKOVIĆ, aculty of Mechanical Engineering, University of Niš, Dragan MARINKOVIĆ, Faculty of Mechanical Engineering and Transport Systems, TU Berlin, Danijel MARKOVIĆ, Nikola PETROVIĆ, Boban NIKOLIĆ, Faculty of Mechanical Engineering, University of Niš

SENSITIVITY ANALYSIS OF FLEXURE HINGE DYNAMICS USING TAGUCHI DESIGN, ANOVA, AND MONTE CARLO SIMULATION

Teodor ĐORĐEVIĆ, Dušan STOJILJKOVIĆ, Ljiljana RADOVIĆ, Nenad T. PAVLOVIĆ, Faculty of Mechanical Engineering, University of Niš, 18000 Niš, Serbia

RESISTANCES IN ELEVATOR TRANSMISSION SYSTEMS AND THE METHOD FOR THEIR DETERMINATION

Radomir ĐOKIĆ, **Jovan VLADIĆ**, **Tanasije JOJIĆ**, Department of Mechanization and Design Engineering, Faculty of Technical Sciences, University of Novi Sad.

FEM-BASED ANALYSIS OF DELAMINATION EFFECTS ON THE BALLISTIC LIMIT OF A COMPOSITE PLATE

Jovica TASIĆ, Department of Transport Engineering and Logistics, Faculty of Mechanical Engineering, University of Niš, Serbia, **Dragan MARINKOVIĆ**, Department of Structural Analysis, Institute of Mechanics, Berlin Institute of Technology, Germany, Department of Transport Engineering and Logistics, Faculty of Mechanical Engineering, University of Niš, Serbia

SELECTION OF THE OPTIMAL THREE STAGE PLANETARY GEAR TRAIN FOR APPLICATION AT ROAD VEHICLE WINCH

Jelena STEFANOVIĆ-MARINOVIĆ, Faculty of Mechanical Engineering, University of Niš, Serbia, Sanjin TROHA, Faculty of Engineering, University of Rijeka, Croatia, Marko PERIĆ, Faculty of Mechanical Engineering, University of Niš, Serbia.

FORMING OF ZIPLINE MATHEMATICAL MODEL

Tanasije JOJIĆ, Jovan VLADIĆ, Radomir ĐOKIĆ, Department of Mechanization and Design Engineering, Faculty of Technical Sciences, University of Novi Sad.

EXPERIMENTAL AND MATHEMATICAL ANALYSIS OF STATIC TENSILE BEHAVIOR OF CONVEYOR BELTS AT DIFFERENT STRAIN RATES

Nikola ILANKOVIĆ, Dragan ŽIVANIĆ, University of Novi Sad, Faculty of Technical Sciences, Department of Mechanization and Design Engineering, Goran RADOJEV, University of Novi Sad, Faculty of Sciences, Department of Mathematics and Informatics, Mirjana BRDAR, University of Novi Sad, Faculty of Technology, Department of Basic Engineering Disciplines.

- EVALUATION OF LASER CUTTING CONDITIONS USING THE WASPAS METHOD

Miloš MADIĆ, Milan TRIFUNOVIĆ, Dušan PETKOVIĆ, Predrag JANKOVIĆ, Department for Production and Information Technologies: University of Niš, Faculty of Mechanical Engineering in Niš, Serbia.

- Room 2 (Motorola Hall): Traffic Engineering
- EXPERIMENTAL INVESTIGATION OF VEHICLE DECELERATION USING THE TAGUCHI METHOD TO IMPROVE TRAFFIC SAFETY

Bojana BOŠKOVIĆ, Academy of Professional Studies Šumadija, College Trstenik, Nadica STOJANOVIĆ, Ivan GRUJIĆ, Jovanka LUKIĆ, Jasna GLIŠOVIĆ, Danijela MILORADOVIĆ, Faculty of Engineering, University of Kragujevac, Kragujevac, Serbia

- EXPLAINABLE ARTIFICIAL INTELLIGENCE FOR TRUSTWORTHY EDGE-BASED ROAD INTERSECTION MANAGEMENT
 - Žarko ĆOJBAŠIĆ, Goran PETROVIĆ, Faculty of Mechanical Engineering, University of Niš, Serbia, **Dejan RANČIĆ**, **Emilija ĆOJBAŠIĆ**, Faculty of Electronic Engineering, University of Niš, Serbia, **Nemanja MARKOVIĆ**, **Bratislav LUKIĆ**. Faculty of Mechanical Engineering, University of Niš, Serbia.
- PERFORMANCE COMPARISON OF EXPLAINABLE ARTIFICIAL INTELLIGENCE IMPLEMENTATION ON TWO EDGE DEVICES FOR A TRANSPORT ENGINEERING PROBLEM Emilija ĆOJBAŠIĆ, Faculty of Electronic Engineering, University of Niš, Serbia, Maša DESPENIĆ Faculty of Mechanical Engineering, University of Niš, Serbia, Dragan STOJANOVIĆ, Ivan ĆIRIĆ, Žarko ĆOJBAŠIĆ, Faculty of Mechanical Engineering, University of Niš, Serbia
- FROM DATA TO GREEN IMAGE: SUSTAINABLE TRANSPORT REPORTING AS A MARKETING TOOL FOR STRENGTHENING COMPETITIVENESS
 Jelena STANKOVIĆ Faculty of Economics: Business management, University of Niš, Jovana MILENOVIĆ Faculty of Economics: Accounting, Audit and Business Finance, University of Niš.
- GAUSS-NEWTON OPTIMIZATION METHOD AND ITS APPLICATIONS,
 Predrag RAJKOVIĆ, Faculty of Mechanical Engineering in Niš, Serbia, Slađana MARINKOVIĆ, Jovan RAJKOVIĆ,
 Faculty of Electronic Engineering, University of Niš, Serbia.